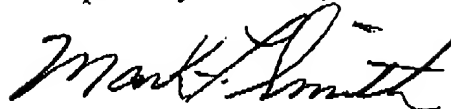


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Respectfully submitted,



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MARKED UP COPY OF AMENDMENTS TO CLAIMS

1. (Twice Amended) A method of inducing a layer of compression along [compressive residual stress in] the surface of a part comprising the steps of:

selecting a region of the part to be treated;

selecting the magnitude of compression [and the residual stress distribution] to be induced [at particular points] along the surface of the selected region;

exerting pressure against the surface of the selected region[,] using an apparatus having a member for exerting pressure against the surface of the selected region and a socket for receiving the member [the pressure being applied in a selected pattern along the surface to form zones of deformation having a deep layer of compressive stress]; and

supplying a constant volume flow of fluid to the socket such that the fluid flows over the member

[varying the pressure and the rate of pressure variation being exerted against the surface to produce the desired residual stress distribution and magnitude of compression within the surface].

11. (Twice Amended) A method of inducing a layer of compressive stress in the surface of a part comprising the steps of:

selecting a region of the part to be treated;

selecting the magnitude of compression and the residual stress distribution to be induced in the surface of the selected region;

programming a control unit to pass a burnishing member positioned within an inner chamber of a burnishing apparatus over the selected region in the selected pattern to produce a zone of deformation having a deep layer of compression within the surface; [and]

programming the control unit to increase, decrease or maintain the pressure being exerted against the surface at selected points along the selected pattern and to vary the rate of increase and decrease of pressure to obtain the desired residual stress distribution and magnitude of compression

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within the surface[.] :

supplying a constant volume flow of fluid to the inner chamber such that the fluid supports the burnishing member.

15. (Amended) A method of inducing a layer of compressive stress in the surface of a part comprising the steps of:

selecting a region of the part to be treated;

selecting the magnitude of compression and the residual stress distribution to be induced in the surface of the selected region;

programming a control unit of a burnishing apparatus to perform a burnishing operation, the burnishing operation being performed along the selected region in a selected pattern to produce a zone of deformation having a deep layer of compression within the surface having associated cold working of less than about 5.0 percent; [and]

performing a second operation to induce a more shallow layer of compressive stress within the surface of the part to produce the desired stress distribution;

whereby said burnishing apparatus further comprising an inner chamber for receiving a burnishing member. means for supplying a constant volume flow of fluid into the inner chamber such that the fluid supports the burnishing member, and means for automatically adjusting the pressure being exerted against the surface of the selected region that increases on the high points and decreases on the low points that are encountered along the surface of the part during the burnishing operation.

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